

Interrelated Water Management Plan Program Funds Application

Deadline for Applications August 28, 2006

Project Sponsor(s): Central Platte Natural Resources District
Tri-Basin Natural Resources District
Twin Platte Natural Resources District
South Platte Natural Resources District

Project Name: Water Banking

**Total Amount Funds Requested from the Interrelated
Water Management Plan Program Fund (IWMPPF):**

\$ 232,620

Years of funding requested (select one):

Years of funding requested (select one):

 1 2 XX 3

Amount Requested from the Fund Year 1:

\$ 104,000

**Amount of Local Match Offered Year 1 (must equal
at least 20% of funding requested from the IWMPPF):**

\$ 54,014

Contact - Name: Ron Bishop

Title: General Manager

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Grand Island NE 68803

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E-mail: rbishop@cpnrd.org

Is this a continuation request for a project previously funded by the Commission? YES XX NO

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Project Overview: In 300 words or less provide an overview of the project for which you seek funding. If you are asking the Natural Resources Commission to fund only a portion of the project, indicate the components for which you seek funding.

The Central Platte Basin has been declared "fully appropriated" and, additionally, that part of the Basin above Elm Creek has been designated "over appropriated". Either of these designations requires NRDs to develop "Integrated Water Management Plans" in cooperation with the Nebraska Department of Natural Resources.

When a basin is found to be "fully appropriated" or "over appropriated", new uses must be offset (replaced) so they don't take away from an existing use. There are several methods or sources of water for offsets:

- * retire existing uses
- * water right transfers
- * water rights leasing
- * conservation or other practices may add water
- * development of "surplus" supplies
- * other

Some of these methods are currently being used, however, no one is inventorying the changes and recording the savings.

Two examples:

1. As a farmer replaces furrow irrigation with a center pivot, many times there are fewer acres irrigated due to corners on the field.
2. As a city expands housing out onto land previously irrigated, new uses are needed for domestic consumption, lawns and parks; but the water previously consumed by the crop is no longer used.

In both cases, there are unrecorded "savings" in existed uses that are neither being accounted for nor inventoried; and therefore not "documented" so they could be used later to "offset" new uses.

That's where a "water bank" comes in. A water bank is a system to keep track of (account for or "bank") changes in water use that reduce water consumption or alter water use patterns in order to have that inventoried water that was "banked" available for offset of new or expanded uses.

This project involves the development of a technical tool to help make accurate decisions on the hydrologically connected groundwater and surface water and will enhance the economic benefits of the available water supplies.

On behalf of the sponsor(s) named above, I hereby certify that the information contained in this application, including all attachments, is true, accurate and complete.

Authorized Signature of Natural Resources District

Title

Date

Typed or Printed Name of Authorized Signatory

Typed or Printed Title

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PROJECT DESCRIPTION

In ten pages or less, provide a discussion of your project using the topic areas and sequence listed below. Please refer to program guidelines to ensure that your project objectives and work products are clearly related to the priorities that will be used by the Commission in ranking.

- **Introduction**

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In both cases, there are unrecorded "savings" in existed uses that are neither being accounted for nor inventoried; and therefore not "documented" so they could be used later to "offset" new uses. That's where a "water bank" comes in. A water bank is a system to keep track of (account for or "bank") changes in water use that reduce water consumption or alter water use patterns in order to have that inventoried water that was "banked" available for offset of new or expanded uses.

This project would develop a system to track new and existing consumptive, conservation, and retired uses within a District in order to ensure compliance with the "no new net use" requirements of the Platte River Program and the management requirements of LB 962 in basins designated as over or fully appropriated; as well as ensuring that the basin isn't unnecessarily offsetting excessive amounts.

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- **Project Objectives**

The objective of this project is to develop a technical tool to improve decision making on managing hydrologically connected waters. It involves an interactive system of documentation and accounting of changes in water use that reduce water consumption or alter water use patterns and keep track of (bank) each change in amount and in location in order to have that inventoried water that was "banked" available for offset of new or expanded uses. Such a system will enhance the economic benefits of the available supply.

This project would develop a system that could be utilized by any Natural Resources District that has an Integrated Management Plan to establish a water bank, as well as monitor the management area for land use changes that would impact water use as a means of assuring compliance.

- **Project Tasks**

There are several tasks involved in developing the water bank system. The first set of tasks deals with taking and preparing the low level aerial photography for 'reading' in order to identify irrigated lands and detect changes from the previous year(s).

The second set of tasks deals with the 'reading' and the identification of changes from the prior year(s). Computer programs are utilized to speed up and to assure uniformity in these efforts.

The third set of tasks involves development and utilization of a 'spread sheet' system of accounting for all of the gains and losses. This spread sheet and the individual "accounts" would be tied to infrared photos of each field/acre along with text listing pertinent details.

The fourth set of tasks involves verification of accuracy in the gains and losses indicated on the water bank spread sheet. Verification will involve, among other things, the visual check of the enhanced aerial infrared photos, certified irrigated acres research, registered well records, and surface water right research.

A fifth set of tasks that overlaps several of these other tasks involves technical training. This training would involve not only Central Platte NRD technical staff, but would also be provided to technical staff members of other NRDs who are co-sponsors of this project. Training would be in the functions of geo-referencing and developing a mosaic of aerial photos; operating the software and accounting system; and reviewing, verifying and finalizing the resulting inventory of 'banked' water.

(Project Timeline on following page.)

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- **Project Timeline**

Year 1-

- a) Secure low-level infrared aerial photography of the Central Platte NRD area.
- b) Geo-reference and mosaic the photography
- c) Develop software that identifies irrigated fields and detects changes from year to year in irrigated acres.
- d) Acquire ARCIMS for display via the Internet.
- e) Training on software.
- f) Establish a spread sheet system of accounting for gains and losses that are tied to photos of each field/area, along with a history of pertinent items.
- g) Review each gain or loss to assure accuracy and to determine the impact of each gain or loss.

Year 2-

- a) Secure low-level infrared aerial photography of the Central Platte NRD area.
- b) Geo-reference and mosaic the photography
- c) Continue spread sheet accounting.
- d) Review each gain or loss to assure accuracy and to determine the impact of each gain or loss.
- e) Training for partner NRDs.

Year 3-

- a) Secure low-level infrared aerial photography of the Central Platte NRD area.
- b) Geo-reference and mosaic the photography
- c) Continue spread sheet accounting.
- d) Review each gain or loss to assure accuracy and to determine the impact of each gain or loss.
- e) Training for partner NRDs.

- **Partnerships**

The Central Platte NRD is partnering with the Twin Platte, Tri-Basin and South Platte Natural Resources Districts. The partners have decided that the Central Platte NRD will house the initial efforts and provide the bulk of the cost-share, with the other partners providing administrative and technical advice during development and training costs during and following development.

- **Budget**

The entire 3-year cost is estimated at \$356,777 with \$232,620 requested over the three-year period. The remaining \$124,157-consisting of 35 percent of the total-would be matched by the local sponsor partners.

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APPLICATION BUDGET SUMMARY

SUMMARY for All Years of Project

(If the project is for one year only, use this only page and delete the following budget pages)

Column A	Column B	Column C	Column D	Column E	Column F
Source of Funds ►	Interrelated Water Plan Program Funds	Local Match Funds			TOTALS ▼
Budget Category as it relates to activities described above ▼					
1. Low Level Photos	21,500	67,500			\$135,000
2. Computer Program	45,000	20,000			65,000
3. GIS Technicians	120,120	21,657			141,777
4. Administrative and Technical Committees		15,000			15,000
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16.					
TOTALS ►	232,0620	124,157			\$356,777

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BUDGET YEAR: ONE

(This page is used by multi-year grants only. If your project is not a multi-year grant, then ignore or delete this page.)

Column A	Column B	Column C	Column D	Column E	Column F
Source of Funds ▶	Interrelated Water Plan Program Funds	Local Match Funds			TOTALS ▼
Budget Category as it relates to activities described above ▼					
1. Aerial Photography	21,500	21,500			\$43,000
2. Computer Program	45,000	20,000			65,000
3. GIS Technician	37,500	7,514			45,014
4. Administrative and Technical		5,000			5,000
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TOTALS ▶	104,000	54,014			\$158,014

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BUDGET YEAR: TWO

(This page is used by multi-year grants only. If your project is not a multi-year grant, then ignore or delete this page.)

Column A	Column B	Column C	Column D	Column E	Column F
Source of Funds ►	Interrelated Water Plan Program Funds	Local Match Funds			TOTALS ▼
Budget Category as it relates to activities described above ▼					
1. Aerial Photography	22,500	22,500			\$45,000
2. GIS Technician	40,500	6,764			47,264
3. Administrative and Technical		5,000			5,000
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TOTALS ►	63,000	34,264			\$97,264

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BUDGET YEAR: THREE

(This page is used by multi-year grants only. If your project is not a multi-year grant, then ignore or delete this page.)

Column A	Column B	Column C	Column D	Column E	Column F
Source of Funds ▶	Interrelated Water Plan Program Funds	Local Match Funds			TOTALS ▼
Budget Category as it relates to activities described above ▼					
1. Aerial Photography	23,500	23,500			\$47,000
2. GIS Technician	42,120	7,380			49,500
3. Administrative and Technical		5,000			5,000
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TOTALS ▶	65,620	35,880			\$101,500

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1. **Have other sources of funding not listed in the Budget Worksheet been approached for project support? If yes, name them and explain the outcome of your request.**
No. This activity is unique to Natural Resources Districts.

2. **Are all of the matching funds in the Budget Worksheet confirmed? If not, please identify those entities and list the date when confirmation is expected. Explain how you will implement the project if these sources do not confirm participation.**

Yes.

An electronic version of the grant application form and information on grant guidelines and timetable can be found on the Department of Natural Resources Web Site: <http://dnr.ne.gov>

Application Submission:

1. One paper copy of the grant application with the required signatures is to be submitted by **August 28, 2006** to:

Jeremy Gehle
Nebraska Department of Natural Resources
301 Centennial Mall South
Lincoln, NE 68509-4676

2. One electronic copy is to be emailed by **August 28, 2006** to:

Jeremy Gehle at: jgehle@dnr.ne.gov